



CMMI[®] Institute

AN ISACA ENTERPRISE



CMMIDEV



CMMISVC



CMMIACQ



P**CMM**



D**MM**

CMMICYBERMATURITY



Purpose

To make the world work better



Promise

To inspire cultures of continuous improvement that elevate performance and create sustainable competitive advantage



1987



The Department of Defense (DoD) contacts Carnegie Mellon University to develop a capability maturity model (CMM) to assess the quality and capability of their software contractors

1991

Carnegie Mellon's Software Engineering Institute releases the first version of the software development capability maturity model

2010

CMMI®

The CMM model expands into other areas such as Services, Acquisition, and People and becomes integrated, now called **Capability Maturity Model Integration (CMMI)®**

2013

Carnegie Mellon University founds the **CMMI Institute** in order to extend the benefits of CMMI beyond software and systems engineering to **any product or service company** regardless of size or industry

2014

CMMI Institute introduces the **Data Management Maturity (DMM)™** model to help companies build, improve, and measure their enterprise data management function and staff

2016

CMMI Institute is **acquired by ISACA®**, a global non-profit association specializing in information technology. Both companies **share a vision** for advancing organizational performance across a spectrum of functions and industries.

2017

CMMI Institute introduces the first cybersecurity maturity management platform to help organizations improve cyber resilience.

CMMI Institute collaborates with the US government to release two **healthcare initiatives** that improve patient safety.

2018

CMMI Development V2.0 is released with key enhancements to meet the challenges of the changing global business landscape


Software Engineering Institute
Carnegie Mellon



CMMI® Institute



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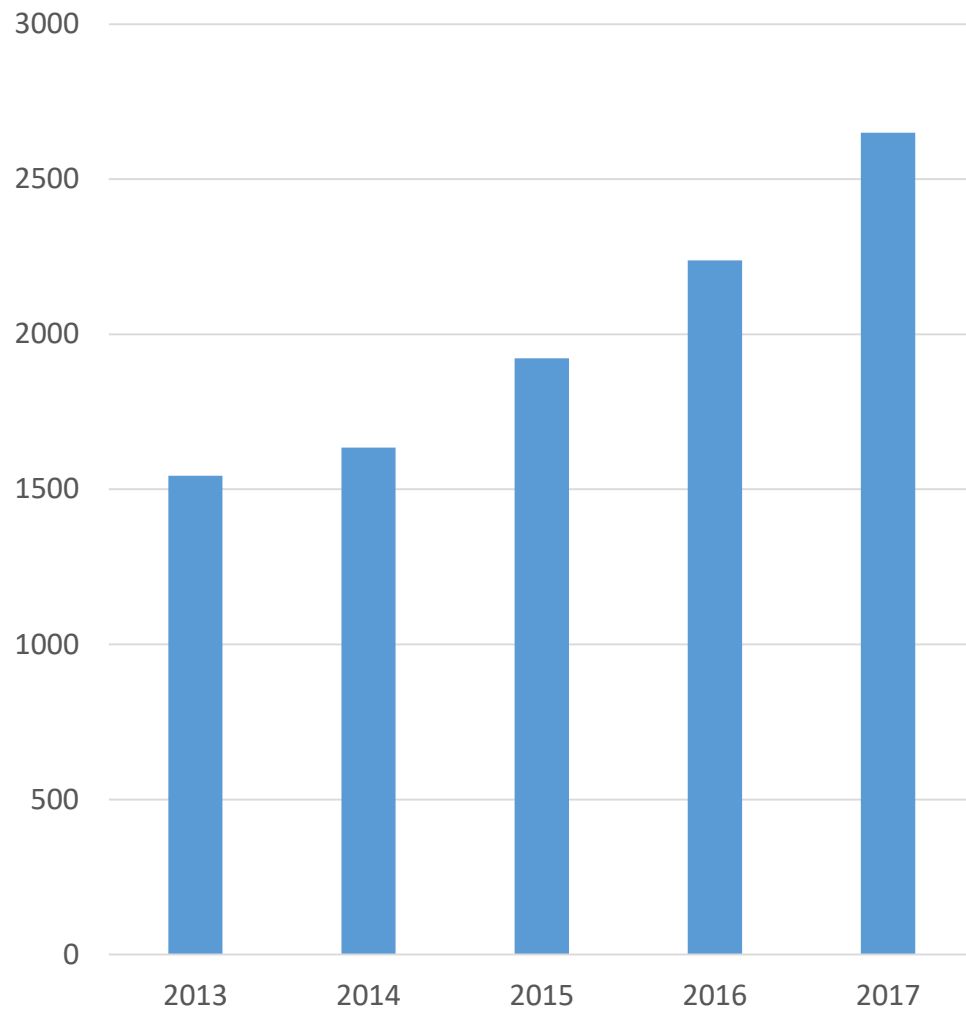






106 Countries

Appraisals



**18% Growth in
Adoption in 2017**



10,000+ Companies





BOSCH



WIPRO
Applying Thought



U.S. AIR FORCE

NOKIA



FannieMae

Bank of America



POLARIS

HITACHI
Inspire the Next



At&T



infinite



MOTOROLA

IBM



NEC

DELHI CONTROL DEVICES PVT LTD
Safety Durability Reliability



Mindtree
Welcome to possible

FUJITSU

Infosys



REUTERS



OCTAWARE
The Bridge To Productivity

Prolifics
Global Technology Solutions Provider

Silicus



ZURICH



BOEING

ZenSar
TECHNOLOGIES

TEKMINDZ

JASMIN
INFOTECH

SIEMENS

TNQ

Riv Consulting Group
Where Strategy Meets Technology

JASMIN
INFOTECH

SAIC
From Science to Solutions

Honeywell



ERICSSON



communications

NORTHROP GRUMMAN

J.P.Morgan

KPMG

Raytheon

SAMSUNG

DynCorp
INTERNATIONAL



TRW



LOCKHEED MARTIN



NTT data
Global IT Innovator

CISCO

GENERAL DYNAMICS



CMMI Center of Excellence





CMMI Cybermaturity Platform

		Risk Events										
		RE-1c	RE-1i	RE-1a	RE-2c	RE-2i	RE-2a	RE-5	RE-7	RE-6	RE-4	RE-3c
Potential Vulnerabilities	PV-1	VH	?	VL	?	VL	VL	H	-	L	-	-
	PV-2	VH	?	VL	?	L	VL	L	-	H	-	-
	PV-3	H	?	VL	?	L	VL	H	-	L	-	-
	PV-4	VH	?	VL	?	L	VL	H	VL	H	-	-
	PV-5	L	?	VL	?	VL	VL	L	-	H	-	-
	PV-6	-	-	VL	-	-	VL	H	L	L	-	-
	PV-7	VH	?	VL	?	L	VL	H	L	H	L	L
	PV-8	VH	-	-	?	-	-	-	-	H	-	VL
	PV-9	VH	?	VL	?	L	VL	L	-	H	-	-
	PV-10	VH	?	VL	?	VL	VL	H	-	-	-	-
	PV-11	VH	?	VL	?	L	VL	H	-	L	-	-
PV-12	VH	?	VL	?	VL	VL	H	VL	-	H	-	
PV-13	-	-	VL	-	-	VL	H	L	H	-	-	
PV-14	-	-	VL	-	-	VL	L	VL	-	-	-	
PV-15	-	-	VL	-	-	VL	H	-	-	-	-	
PV-6	-	-	VL	-	-	VL	H	L	L	-	-	
PV-8	VH	?	VL	?	L	VL	H	L	H	L	L	
PV-8	VH	-	-	?	-	-	-	-	H	-	VL	
PV-9	VH	?	VL	?	L	VL	L	-	H	-	-	
PV-10	VH	?	VL	?	VL	VL	H	-	-	-	-	
PV-11	VH	?	VL	?	L	VL	H	-	L	-	-	

Risk Questionnaire

RE-1c: How likely is it that Customer or Privacy Data is disclosed because of:

[PV-1] Internal breach due to inadequate network segmentation?

Very Low Low High **Very High** [?]

[PV-2] Improperly tested and/or vulnerable web service or software application leads to malicious activity?

Very Low Low **High** Very High [?]

[PV-3] Attack through 3rd party partner?

Very Low **Low** High Very High [?]

[PV-4] Staff fall victim to a social engineering attack?

Very Low Low **High** Very High [?]

[PV-5] Unauthorized action occurs due to authentication issue?

Very Low Low High Very High [?]

[PV-7] Poor practices due to lack of effective policy?

Very Low Low High **Very High** [?]

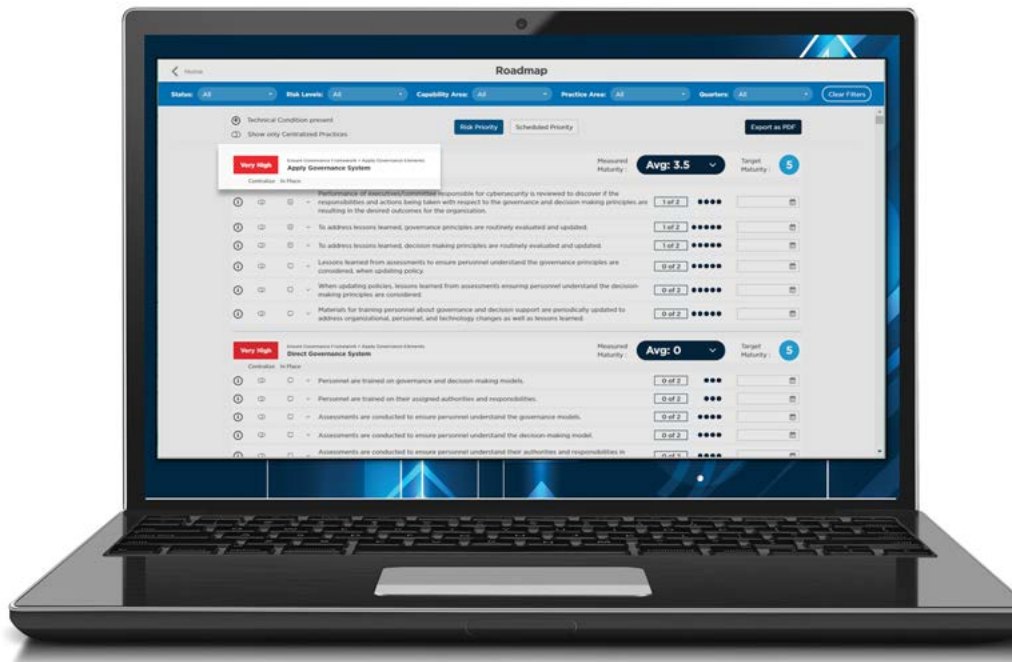
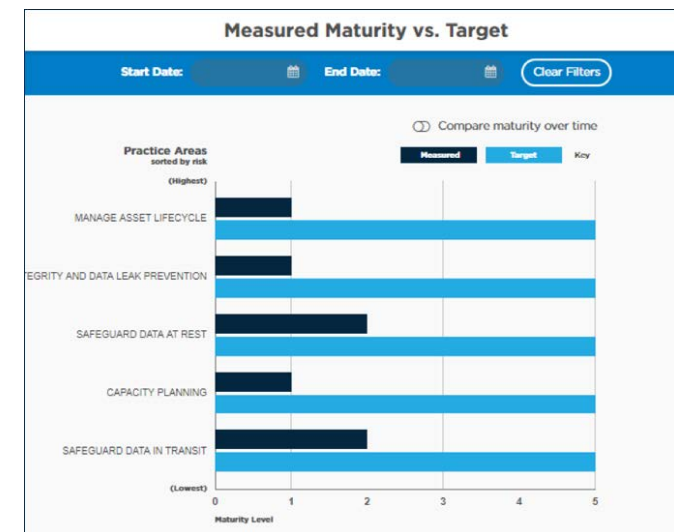
[PV-8] Confidential data not destroyed properly?

Identify and Manage Risks > Implement Risk Identification

Vulnerability and Threat Identification
 Assessor: Kelly Hood | Due: April 17, 2018 | Submitted: February 7, 2018

Activity Audit: **26 Total Practices**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	The organization has identified potential physical vulnerabilities that might lead to known risks.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	The organization has identified potential logical vulnerabilities that might lead to known risks.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	The organization collaborates with relevant partners (e.g., facilities management, system operations personnel) to periodically catalog known vulnerabilities.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	A standard set of tools and/or methods is used to identify vulnerabilities.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerability identification draws from meaningful and sufficiently disparate sources of information.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerability identification sources are kept current.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vulnerabilities are being actively discovered.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	There exists a recorded plan for performing vulnerability identification activities.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	A repository is used for recording information about vulnerabilities and their resolution.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Underlying causes for vulnerabilities are identified (e.g., through root-cause analysis).



Introducing **CMMI**[®] **Development** V2.0

Driving Performance
through Capability



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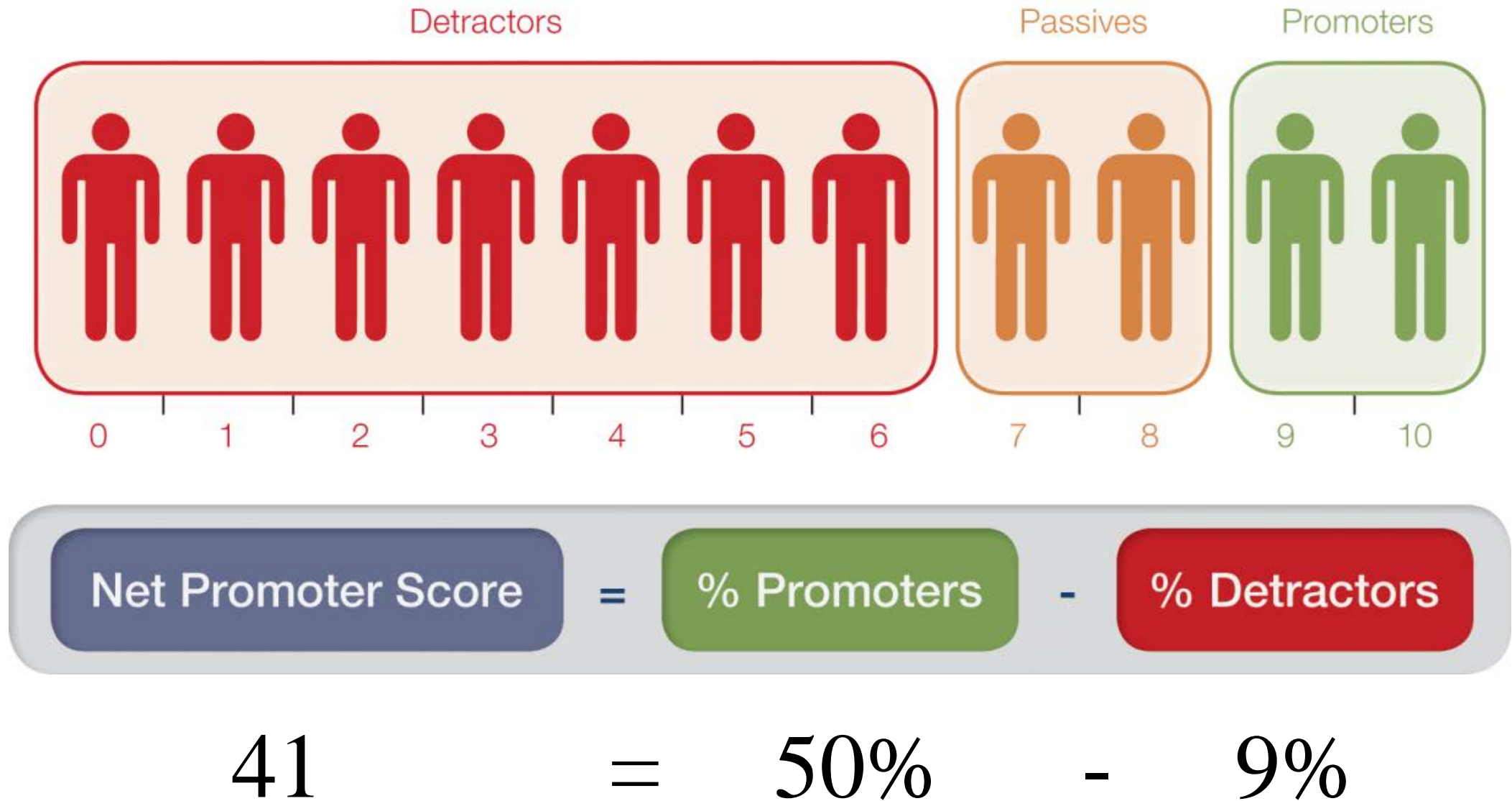
HIRE ME!

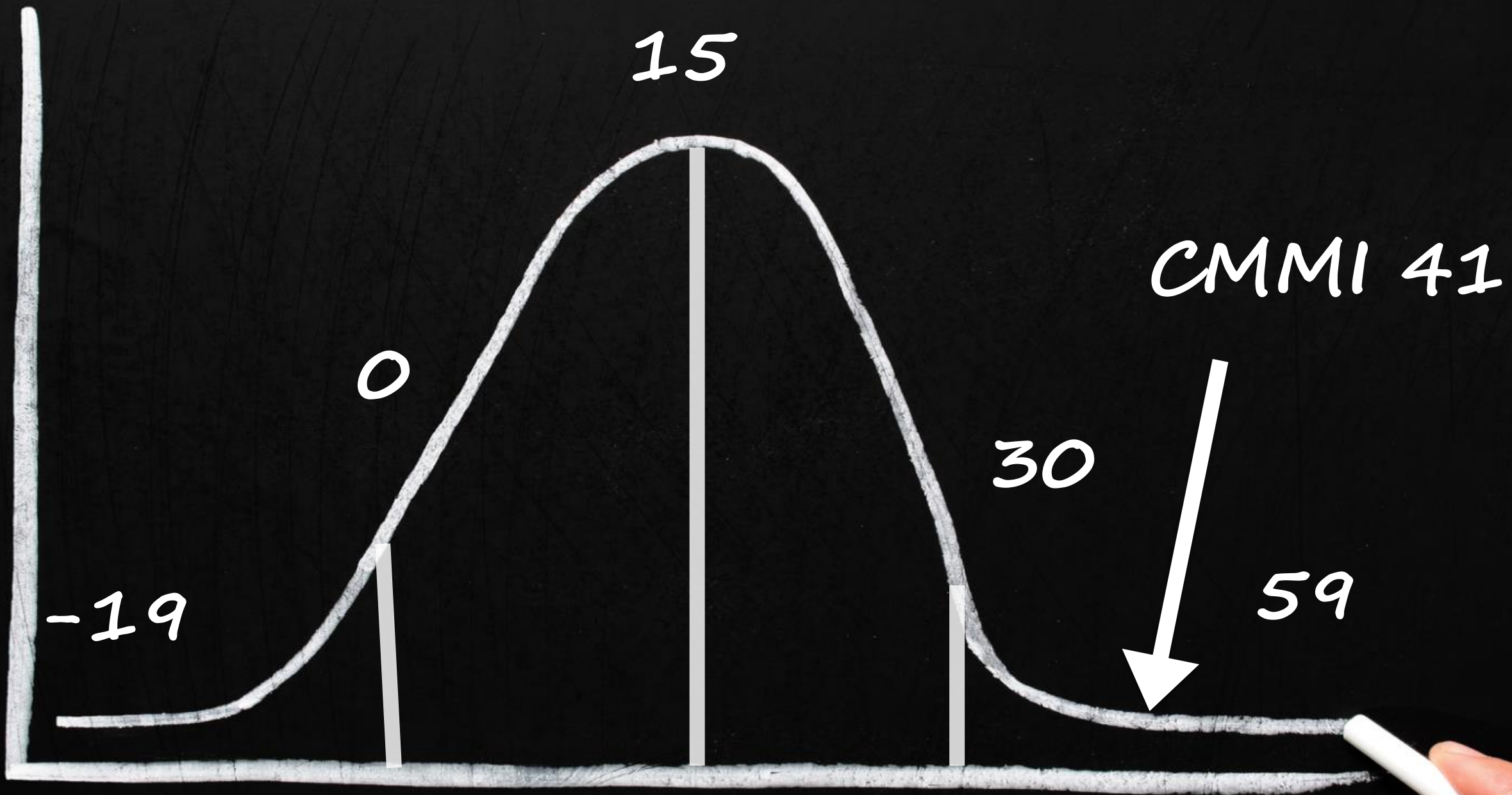
On a scale of 1 to 10, 10 being the highest, how likely are you to recommend CMMI as a model for the elevation of organizational performance to a friend or colleague?



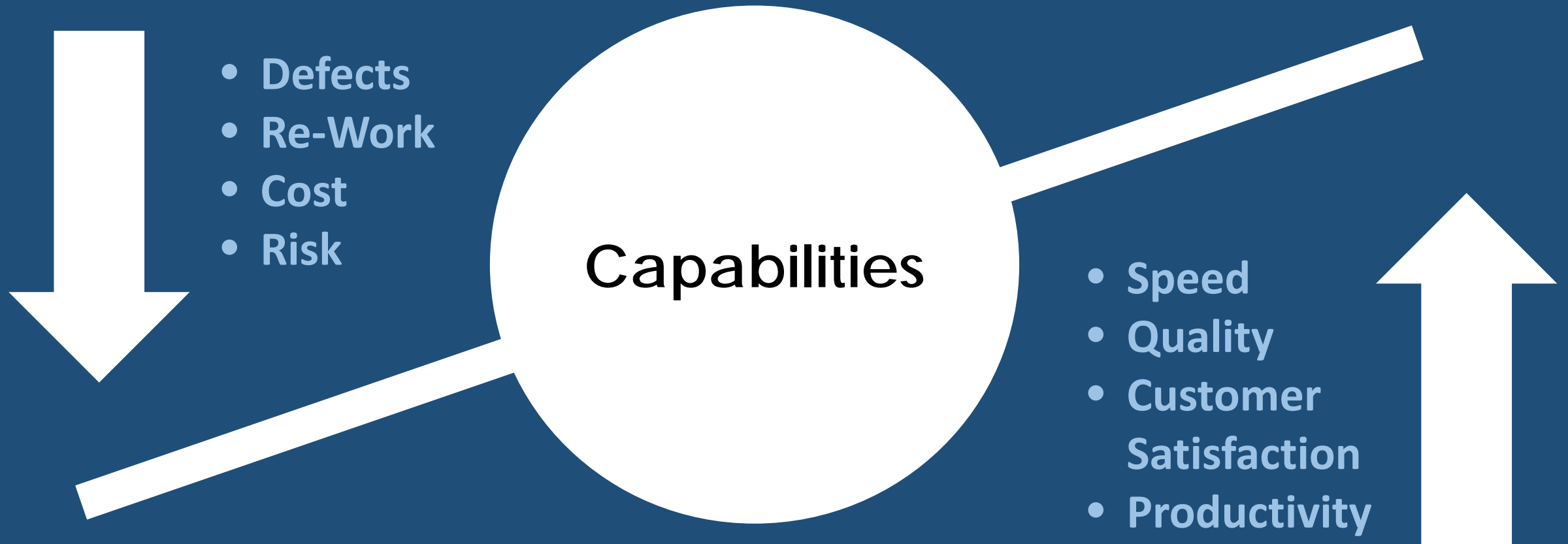
1,841 Individuals responded

Net Promoter Score

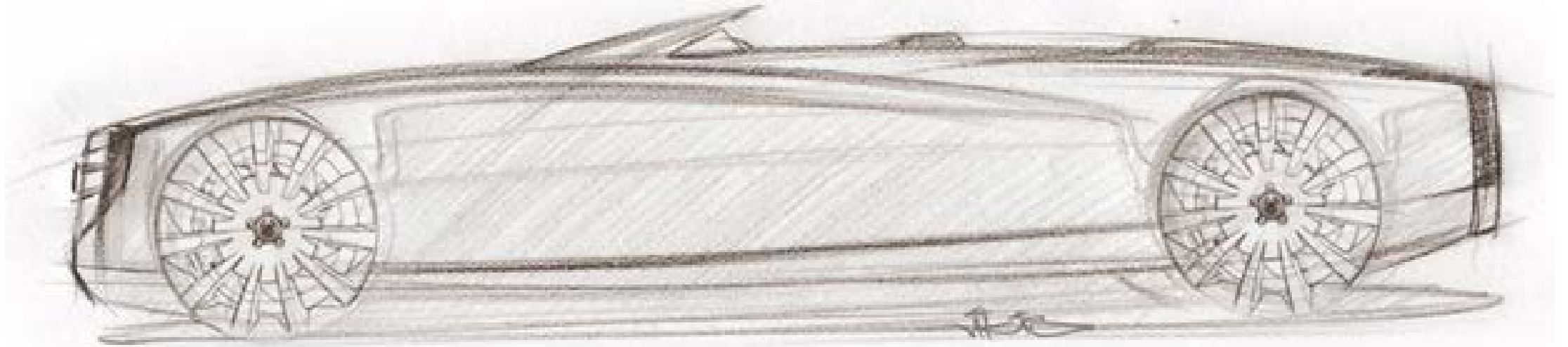




The Benefits of Building Capability



70% Increase in Milestones Met



G E N E R A L M O T O R S

25% Increase in Productivity



SIEMENS

40% Decrease in Cost of Rework

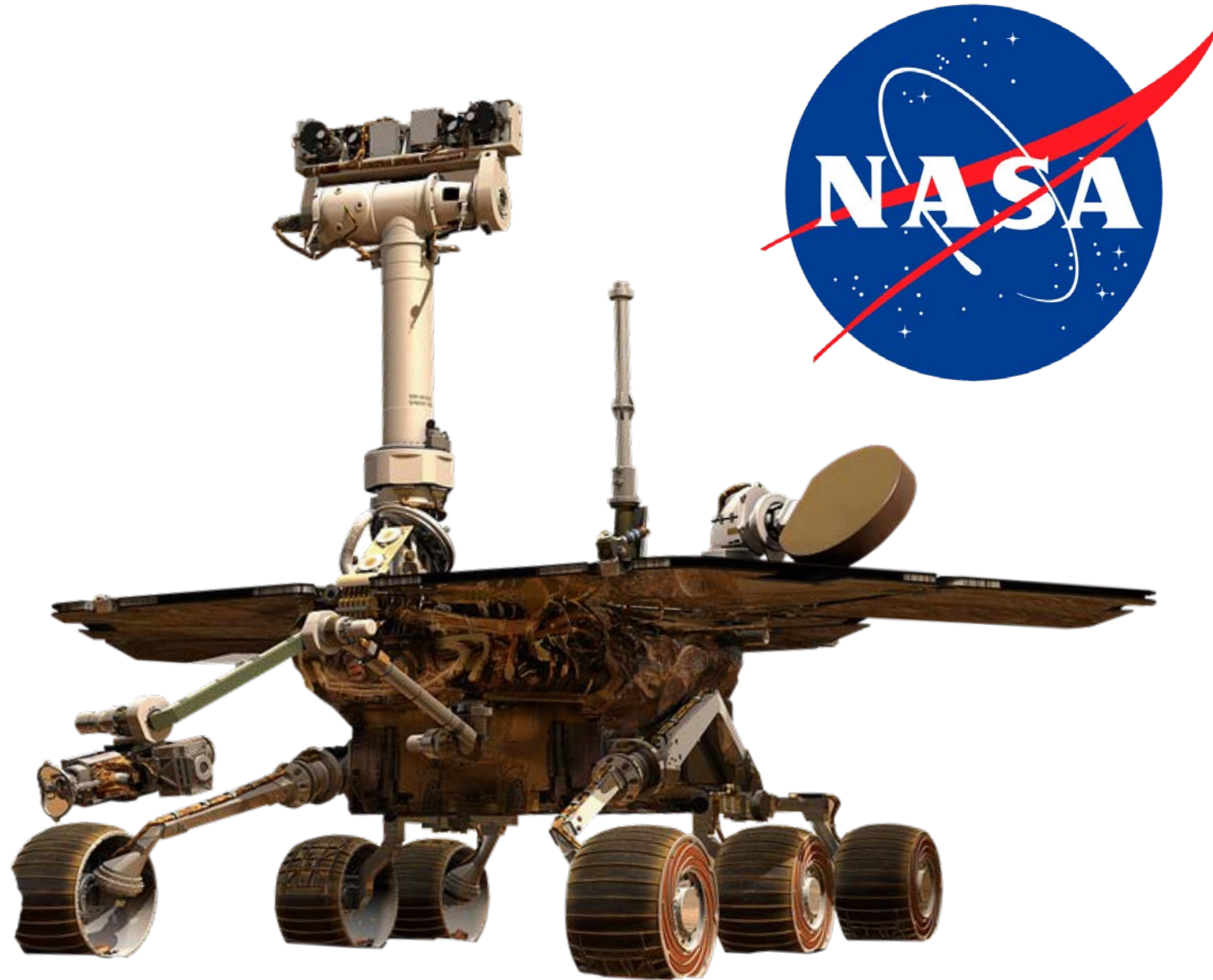


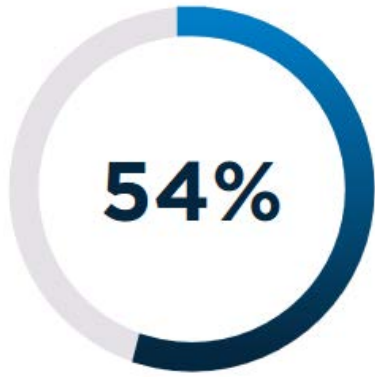
Raytheon



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352,000,000

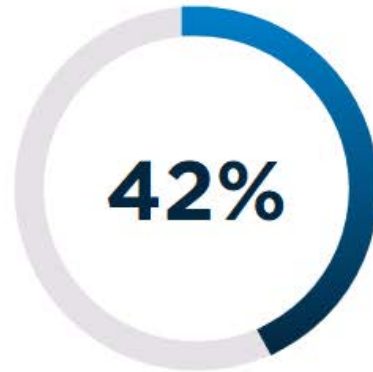




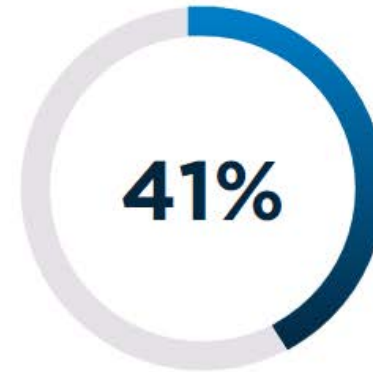
do not measure
what matters



don't have
standard
processes,
process assets,
and job aids



have no
established
planning
process



aren't encouraging
employees to build
organizational
capabilities



cite difficulties in
monitoring plans
and making
adjustments
when needed

CMMI V2.0



**Leverage
Current Best
Practices**







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Critical Success Factors and Objectives for the Business of the OU

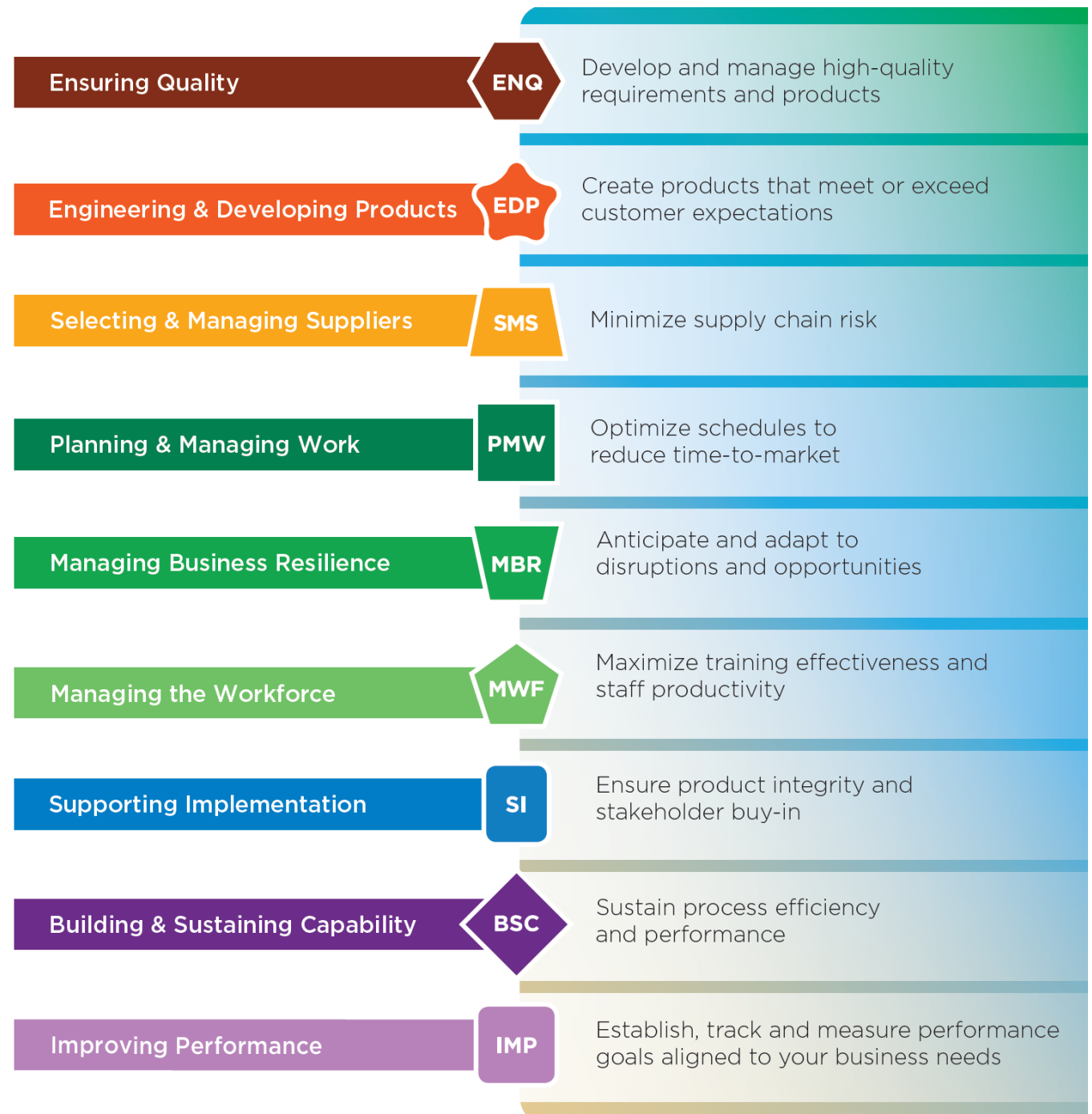
Success Factor #	(Business) Success Factor	Business Objective	Link to Performance Objective	Type of Work	Comments/Remarks
1	Component X Preparation Progress	Monthly % completion of scheduled work	Target is variable	Actual completion versus scheduled	Target is variable by month and ranges from 6-27 dependent on lifecycle.
2	Rejection Rate & Cost 500 PPM	Evaluate the effectiveness of detect detection throughout the product lifecycle and cost of correcting defects	1500 ppm, \$275, 000	Defects per part delivered	Calculated monthly
3	Deliverables X, Y, Z	To satisfy conditions for payment of applicable milestones	Target is variable	Progress data provided by engineers of the delivery	Target is variable by month and ranges from 3-15 dependent on lifecycle.
4	Net-income	Achieve project financial target and ROI	\$.6M - 7.5M	Sales/Cost data before tax	Variable by month based on cash flow and expenses
5	Meet All contractual SLAs	Close 95% of all Severity Level 1 HD Trouble tickets within 30 days	[link]	Systems Integration - Services	Project#2: SLA #4
6	Reduce time to market for new software releases	Reduce verification and integration rework delays and cost	Reduce the cost and cycle for fixing new requirements and design by 10% per release	Embedded Software	Two types of requirements; new requirements and bug fixes.





**Leverage
Current Best
Practices**

CAPABILITY AREAS







**View
Group:**

Development V... ▾

Maturity:

Level 3 ▾

Context:

None ▾

Apply

OVERVIEW

APPENDICES

VIEW: DEVELOPMENT V2.0 -- MATURITY: LEVEL 3 -- CONTEXT SPECIFIC: NONE

Back

Decision Analysis and Resolution



Estimating



Governance



Implementation Infrastructure



Managing Performance and Measurement



Monitor and Control



Organizational Training



Peer Reviews



Planning



Process Asset Development



MANAGING PERFORMANCE AND MEASUREMENT (MPM)

Required PA Information

Intent

Manage performance using measurement and analysis to achieve business objectives.

Value

Maximizes business return on investment by focusing management and improvement efforts on cost, schedule, and quality performance.

Additional Required PA Information

This practice area helps to:

- Ensure that benefits and business performance are the leading factors in driving

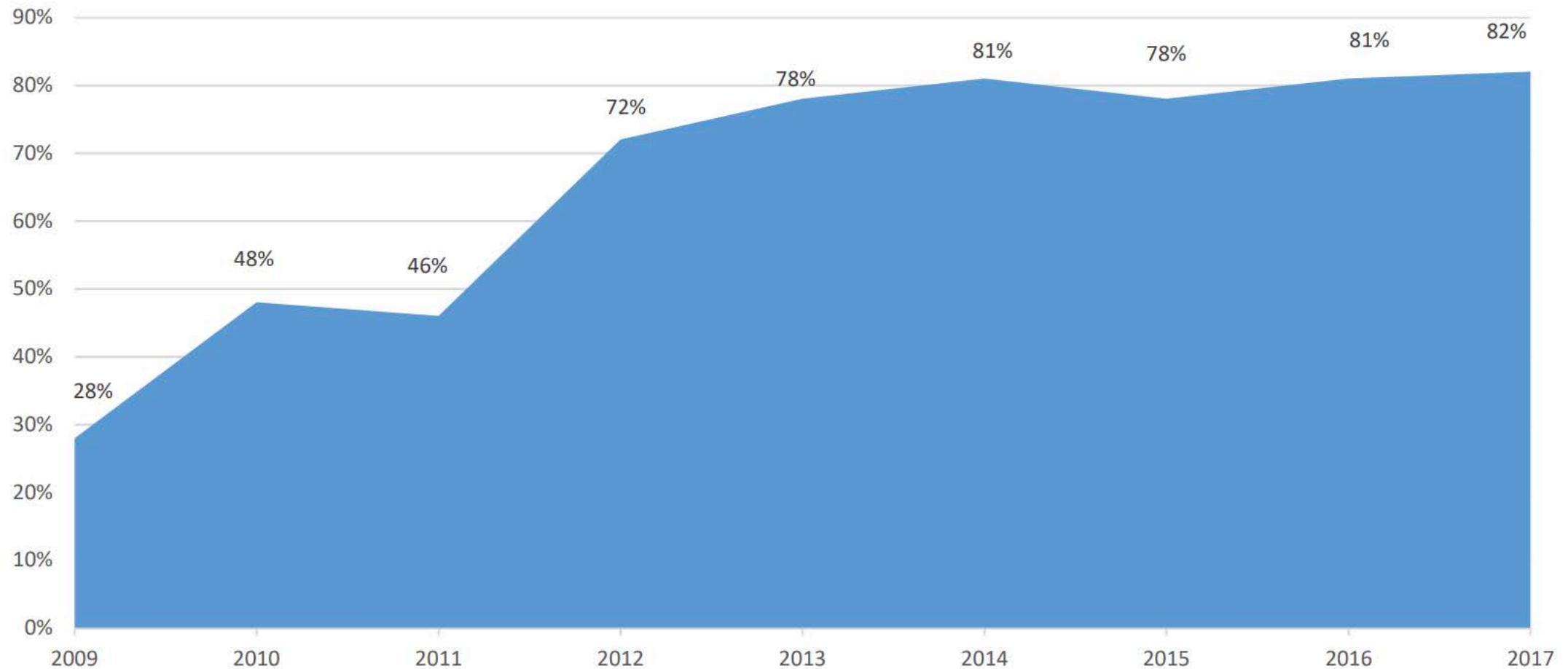




**Leverage
Current Best
Practices**

CMMI Appraisals using Agile Methods

The number of appraised organizations using agile methods continues to **exceed 80%**



An aerial photograph of a city, possibly a university campus, with a strong green color overlay. In the upper center, a group of people are standing in a circular formation, possibly performing a team exercise. The text is overlaid on the lower right portion of the image.

A Guide to Scrum and CMMI®: Improving Agile Performance with CMMI



CMMI Institute



Nationwide[®]
is on your side

8 to 1 defects
60% to 90% on time



CMMIDEV / 3SM



-25% cost
+25% speed



CMMIDEV / 3SM

minacs +30% sprint
commitments



CMMIDEV / 3SM

Exp. 2018-10-16 / Appraisal #24972



CMMISVC / 3SM

Exp. 2018-10-16 / Appraisal #24972

**View
Group:**

Development V... ▾

Maturity:

Level 2 ▾

Context:

All ▾

Apply

OVERVIEW

APPENDICES

VIEW: DEVELOPMENT V2.0 -- MATURITY: LEVEL 2 -- CONTEXT SPECIFIC: ALL

Back

DOWNLOAD ENTIRE VIEW ⬇

Configuration Management ⬇

Estimating ⬇

Governance ⬇

Implementation Infrastructure ⬇

Managing Performance and Measurement ⬇

Monitor and Control ⬇

Planning ⬇

Process Quality Assurance ⬇

Requirements Development and ⬇

Figure EST-1: Estimating in an Agile Cycle





**Leverage
Current Best
Practices**





IMPROVEMENT



PERFORMANCE



EFFICIENCY



SCOPE

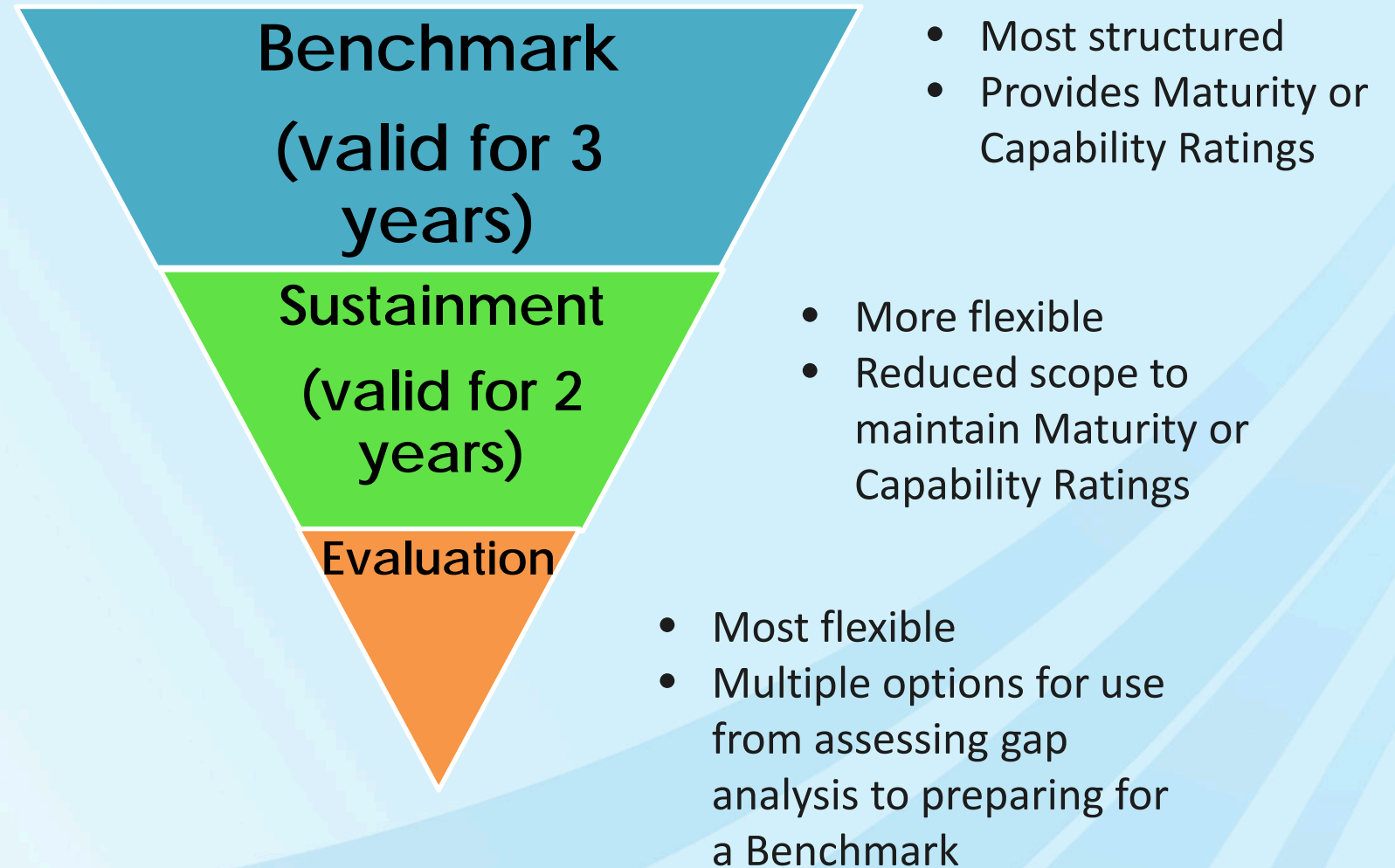


GOALS



TIME

CMMI Development V2.0 Appraisal Types



CASE STUDY

China Merchant Bank
Reduces Appraised
Preparation Time by 50%
across 90% of their Projects



COMPANY PROFILE

Established in 1987 as the first joint-stock commercial bank in China, China Merchants Bank (CMB) has created dozens of first's in our industry. The landmark of innovated "All-in-One Card" is China's first debit card based on client's number management. "All-in-One Net" is China's first, real online banking solution. CMB took the lead in the domestic banking industry by launching many new businesses



CMMI Development V2.0



**Leverage
Current Best
Practices**





Reading
Grade Level
14.9 to 12.2

Adoption guidance

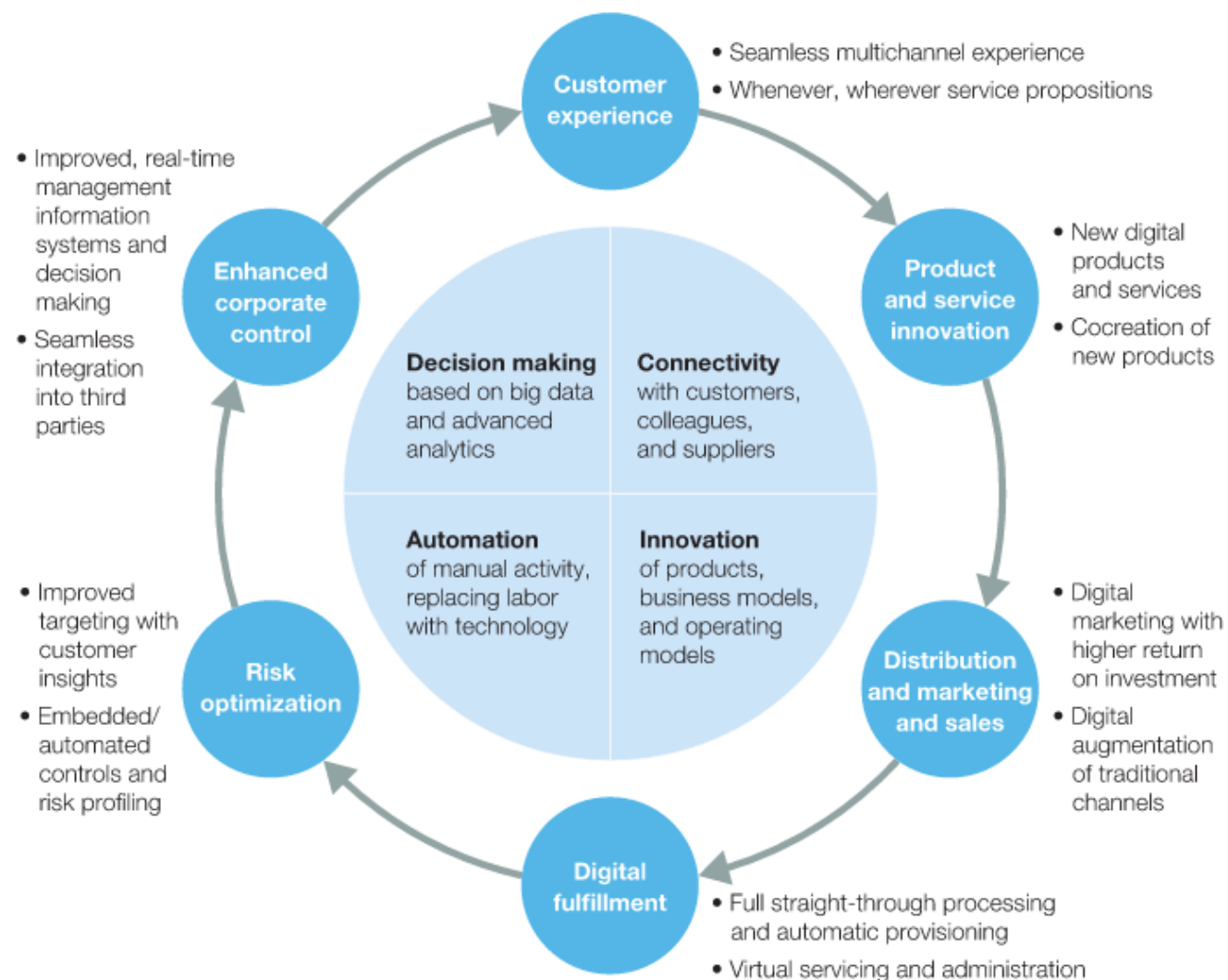


It is estimated that 75% of the S&P's 500 firms will be replaced with new ones by 2027.

S&P Global



Digital can reshape every aspect of the modern enterprise.



Source: Expert interviews; McKinsey analysis



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CMMIACQ



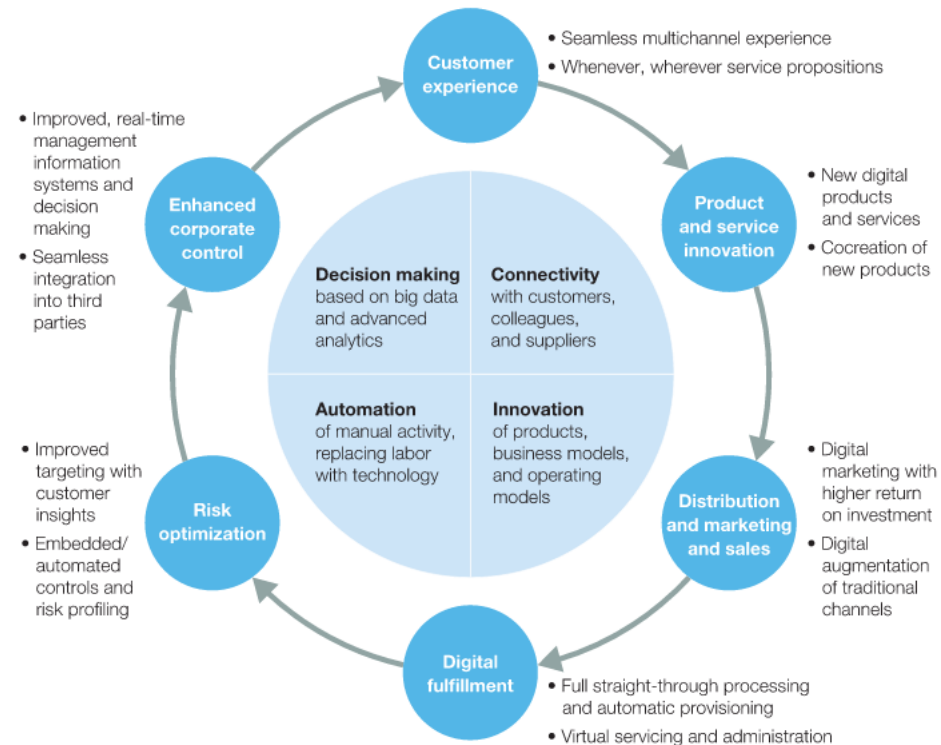
PCMM



DMM

CMMI CYBERMATURITY

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